

Table S1: Search strings with Boolean operators used for each database search.

Themes	Search Strings for PubMed	Search Strings for Embase
Place / Mould / Housing	(australia[MeSH terms] OR australia[Title/Abstract]) AND (damp*[Title/Abstract] OR mould[Title/Abstract] OR fungi[Title/Abstract] OR mildew[Title/Abstract] OR condensation[Title/Abstract] OR flood*[Title/Abstract] OR "Water damage"[Title/Abstract] OR "Water-damage"[Title/Abstract]) AND (hous*[Title/Abstract] OR indoor[Title/Abstract] OR home*[Title/Abstract] OR dwelling*[Title/Abstract] OR residen*[Title/Abstract] OR building*[Title/Abstract])	#1 Australia:ti,ab
		#2 AND (damp*:ti,ab OR mould:ti,ab OR fungi:ti,ab OR mildew:ti,ab OR condensation:ti,ab OR flood*:ti,ab OR 'Water damage':ti,ab OR 'Water-damage':ti,ab)
		#3 AND (hous*:ti,ab OR indoor:ti,ab OR home*:ti,ab OR dwelling*:ti,ab OR residen*:ti,ab OR building*:ti,ab)
Place / Mould / Housing / Health & Wellbeing	(australia[MeSH terms] OR australia[Title/Abstract]) AND (damp*[Title/Abstract] OR mould[Title/Abstract] OR fungi[Title/Abstract] OR mildew[Title/Abstract] OR condensation[Title/Abstract] OR flood*[Title/Abstract] OR "Water damage"[Title/Abstract] OR "Water-damage"[Title/Abstract]) AND (hous*[Title/Abstract] OR indoor[Title/Abstract] OR home*[Title/Abstract] OR dwelling*[Title/Abstract] OR residen*[Title/Abstract] OR building*[Title/Abstract]) AND (health[Title/Abstract] OR wellbeing[Title/Abstract] OR well-being[Title/Abstract])	#1 AND #2 AND #3
		#1 AND #2 AND #3 AND #5
		#5 AND (health:ti,ab OR wellbeing:ti,ab OR well-being:ti,ab)
Place / Mould / Housing / Risk & Impact	(australia[MeSH terms] OR australia[Title/Abstract]) AND (damp*[Title/Abstract] OR mould[Title/Abstract] OR fungi[Title/Abstract] OR mildew[Title/Abstract] OR condensation[Title/Abstract] OR flood*[Title/Abstract] OR "Water damage"[Title/Abstract] OR "Water-damage"[Title/Abstract]) AND (hous*[Title/Abstract] OR indoor[Title/Abstract] OR home*[Title/Abstract] OR dwelling*[Title/Abstract] OR residen*[Title/Abstract] OR building*[Title/Abstract]) AND (cost*[Title/Abstract] OR impact*[Title/Abstract] OR hardship*[Title/Abstract] OR Economic*[Title/Abstract] OR Financial[Title/Abstract] OR risk*[Title/Abstract] OR perception*[Title/Abstract])	#1 AND #2 AND #3 AND #7
		#7 AND (cost*:ti,ab OR impact*:ti,ab OR hardship*:ti,ab OR Economic*:ti,ab OR Financial:ti,ab OR risk*:ti,ab OR perception*:ti,ab)
Place / Mould / Housing / Health, Wellbeing, Risk & Impact	(australia[MeSH terms] OR australia[Title/Abstract]) AND (damp*[Title/Abstract] OR mould[Title/Abstract] OR fungi[Title/Abstract] OR mildew[Title/Abstract] OR condensation[Title/Abstract] OR flood*[Title/Abstract] OR "Water damage"[Title/Abstract] OR "Water-damage"[Title/Abstract]) AND (hous*[Title/Abstract] OR indoor[Title/Abstract] OR home*[Title/Abstract] OR dwelling*[Title/Abstract] OR residen*[Title/Abstract] OR building*[Title/Abstract]) AND (health[Title/Abstract] OR wellbeing[Title/Abstract] OR well-being[Title/Abstract]) AND (cost*[Title/Abstract] OR impact*[Title/Abstract] OR hardship*[Title/Abstract] OR Economic*[Title/Abstract] OR Financial[Title/Abstract] OR risk*[Title/Abstract] OR perception*[Title/Abstract])	#1 AND #2 AND #3 AND #5 AND #7

Table S1. Search strings with Boolean operators used for each database search (continued).

Themes	Search Strings for Scopus	Search Strings for Science Direct ¹
Place / Mould / Housing	(TITLE-ABS-KEY (australia) AND TITLE-ABS-KEY (damp* OR mould OR fungi OR mildew OR condensation OR flood* OR "Water damage" OR "Water-damage") AND TITLE-ABS-KEY (hous* OR indoor OR home* OR dwelling* OR residen* OR building*))	Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND house
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND housing
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND indoor
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND home
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND dwelling
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND residence
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND residential
		Australia AND (damp OR mould OR fungi OR mildew OR condensation OR flood OR "Water damage") AND building
Place / Mould / Housing / Health & Wellbeing	(TITLE-ABS-KEY (australia) AND TITLE-ABS-KEY (damp* OR mould OR fungi OR mildew OR condensation OR flood* OR "Water damage" OR "Water-damage") AND TITLE-ABS-KEY (hous* OR indoor OR home* OR dwelling* OR residen* OR building*) AND TITLE-ABS-KEY (health OR wellbeing OR well-being))	Australia AND residential AND housing AND mould AND risk AND impact AND health
		Australia AND (damp OR mould OR flood OR "Water damage") AND (house OR home) AND (health OR well-being)
		Australia AND (damp OR mould OR flood OR "Water damage") AND (dwelling OR residence) AND (health OR well-being)
		Australia AND (damp OR mould OR flood OR "Water damage") AND (building OR residential) AND (health OR well-being)
Place / Mould / Housing / Risk & Impact	(TITLE-ABS-KEY (australia) AND TITLE-ABS-KEY (damp* OR mould OR fungi OR mildew OR condensation OR flood* OR "Water damage" OR "Water-damage") AND TITLE-ABS-KEY (hous* OR indoor OR home* OR dwelling* OR residen* OR building*) AND TITLE-ABS-KEY (cost* OR impact* OR hardship* OR economic* OR financial OR risk* OR perception*))	Australia AND dwelling AND residential AND housing AND mould AND risk AND impact AND health
		Australia AND (damp OR mould OR flood OR "Water damage") AND (house OR home) AND (cost OR impact)
		Australia AND (damp OR mould OR flood OR "Water damage") AND (housing OR indoor) AND (cost OR impact)
Place / Mould / Housing / Health, Wellbeing, Risk & Impact	(TITLE-ABS-KEY (australia) AND TITLE-ABS-KEY (damp* OR mould OR fungi OR mildew OR condensation OR flood* OR "Water damage" OR "Water-damage") AND TITLE-ABS-KEY (hous* OR indoor OR home* OR dwelling* OR residen* OR building*) AND TITLE-ABS-KEY (health OR wellbeing OR well-being) AND TITLE-ABS-KEY (cost* OR impact* OR hardship* OR economic* OR financial OR risk* OR perception*))	Included above

¹ Science Direct has a limit on the number of key word fields and searches.

Table S2: MMAT Quality Ratings for Included Studies – Qualitative Descriptive Studies.

Rating Criteria	Author(s)			
	(Ziersch, Walsh, et al., 2017)	(Ziersch, Due, et al., 2017)	(Andersen et al., 2016)	(Commonwealth of Australia. House of Representatives Standing Committee on Health Aged Care and Sport, 2018)
1. Is the qualitative approach appropriate to answer the research question?	Y	Y	Y	Y
2. Are the qualitative data collection methods adequate to address the research question?	Y	Y	Y	Y
3. Are the findings adequately derived from the data?	Y	Y	Y	Y
4. Is the interpretation of results sufficiently substantiated by data?	Y	Y	Y	Y
5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Y	Y	Y	Y

Notes: Grey background indicates that the study was not published in an academic journal/publication. Y = Yes, N = No, U = Unknown, N/a = Not applicable

Table S3: MMAT Quality Ratings for Included Studies – Quantitative Non-randomized Studies.

Rating Criteria	Author(s)																	
	(Andersen, Skinner, et al., 2018)	(Andersen, Williamson, et al., 2018)	(Zhang et al., 2005)	(Hall et al., 2017)	(Mészáros et al., 2014)	(Matheson et al., 2005)	(Dharmage et al., 2002)	(Dharmage et al., 2001)	(Ponsonby et al., 2000)	(Mihirshahi et al., 2002)	(Dharmage, Bailey, Raven, Cheng, et al., 1999)	(Dharmage, Bailey, Raven, Mitakakis, et al., 1999)	(Couper et al., 1998)	(Garrett, Hooper, et al., 1998)	(Godish et al., 1996)	(Midson et al., 2012)	(C. Cheong et al., 2007)	(C. D. Cheong et al., 2004)
1. Are the participants representative of the target population?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
3. Are there complete outcome data?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
4. Are the confounders accounted for in the design and analysis?	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y	N	N	N	N	Y
5. During the study period, is the intervention administered (or exposure occurred) as intended?	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Grey background indicates that the study was not published in an academic journal/publication. Y = Yes, N = No, U = Unknown, N/a = Not applicable

Table S4: MMAT Quality Ratings for Included Studies – Quantitative Descriptive Studies.

Rating Criteria		Author(s)																	
		(Baker & Daniel, 2020) (Haddad et al., 2019) (Choice et al., 2018) (Choice & National Shelter, 2016) (Victorian Council of Social Service (VCOSS), 2010)					(Saltos et al., 1982)	(Martin, 2019)	(S. C. Johnston et al., 2016) (Robertson, 2001) (Garrett, Rayment, et al., 1998) (Robertson, 1992) (Bryant & Rogers, 1991)	(Baker et al., 2018) (Trewin, 1999)		(Kempton et al., 2021)	(Law & Dewsbury, 2018)	(Dewsbury, Law, & Henderson, 2016d)	(Zalar et al., 2011)				
1.	Is the sampling strategy relevant to address the research question?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2.	Is the sample representative of the target population?	Y	N	Y	Y	N	N/a	N	N	N	Y	Y	Y	N	Y	Y	N/a	N/a	N/a
3.	Are the measurements appropriate?	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4.	Is the risk of nonresponse bias low?	Y	U	U	U	N/a	Y	Y	N	Y	N	Y	Y	Y	Y	N/a	Y	Y	N/a
5.	Is the statistical analysis appropriate to answer the research question?	Y	N	Y	Y	N	N/a	Y	Y	Y	Y	Y	Y	Y	Y	Y	N/a	N/a	Y

Notes: Grey background indicates that the study was not published in an academic journal/publication. Y = Yes, N = No, U = Unknown, N/a = Not applicable

Table S5: MMAT Quality Ratings for Included Studies – Mixed Method Studies.

Rating Criteria	Author(s)				
	(Bower et al., 2021)	(N. Johnston & Reid, 2019)	(Crommelin et al., 2021)	(Dewsbury, Law, Potgieter, et al., 2016)	(Willand et al., 2019)
1. Is there an adequate rationale for using a mixed methods design to address the research question?	Y	Y	Y	Y	Y
2. Are the different components of the study effectively integrated to answer the research question?	Y	Y	Y	Y	Y
3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	Y	Y	Y	Y	Y
4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?	Y	Y	Y	Y	Y
5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	Y	Y	Y	Y	Y

Notes: Grey background indicates that the study was not published in an academic journal/publication. Y = Yes, N = No, U = Unknown, N/a = Not applicable

Table S6: AACODS Quality Ratings for Included Studies – Grey Literature only.

Rating Criteria	Author(s)															
	(Baker & Daniel, 2020)	(Haddad et al., 2019)	(Choice et al., 2018)	(Ziersch, Due, et al., 2017)	(Choice & National Shelter, 2016)	(Victorian Council of Social Service (VCOSS), 2010)	(Martin, 2019)	(Commonwealth of Australia. House of Representatives Standing Committee on Health Aged Care and Sport, 2018)	(Baker et al., 2018)	(Trewin, 1999)	(N. Johnston & Reid, 2019)	(Crommelin et al., 2021)	(Dewsbury, Law, Potgieter, et al., 2016)	(Dewsbury, Law, & Henderson, 2016d)	(Midson et al., 2012)	(C. Cheong et al., 2007)
1. Authority:	Y	Y	Y*	Y	Y*	Y*	Y*	Y**	Y	Y**	Y	Y	Y	Y	N	Y
2. Accuracy:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
3. Coverage:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
4. Objectivity:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N
5. Date:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6. Significance:	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: Grey background indicates that the study was not published in an academic journal/publication. Y = Yes – University/research institutes/industry & university partnership, Y* = Yes – Advocacy/private business, Y** = Government, N = No, U = Unknown

1. Authority:	Individual author: • Associated with a reputable organisation? • Professional qualifications or considerable experience? • Produced/published other work (grey/black) in the field? • Recognised expert, identified in other sources? • Cited by others? (use Google Scholar as a quick check) • Higher degree student under “expert” supervision? Organisation or group: • Is the organisation reputable? (e.g. W.H.O) • Is the organisation an authority in the field? In all cases: • Does the item have a detailed reference list or bibliography?
2. Accuracy:	• Does the item have a clearly stated aim or brief? • Is so, is this met? • Does it have a stated methodology? • If so, is it adhered to? • Has it been peer-reviewed? • Has it been edited by a reputable authority? • Supported by authoritative, documented references or credible sources? • Is it representative of work in the field? • If No, is it a valid counterbalance? • Is any data collection explicit and appropriate for the research? • If item is secondary material (e.g. a policy brief of a technical report) refer to the original. Is it an accurate, unbiased interpretation or analysis?
3. Coverage:	All items have parameters which define their content coverage. These limits might mean that a work refers to a particular population group, or that it excluded certain types of publication. A report could be designed to answer a particular question, or be based on statistics from a particular survey. • Are any limits clearly stated?
4. Objectivity:	It is important to identify bias, particularly if it is unstated or unacknowledged. • Opinion, expert or otherwise, is still opinion: is the author’s standpoint clear? • Does the work seem to be balanced in presentation?
5. Date:	For the item to inform your research, it needs to have a date that confirms relevance • Does the item have a clearly stated date related to content? No easily discernible date is a strong concern. • If no date is given, but can be closely ascertained, is there a valid reason for its absence? • Check the bibliography: have key contemporary material been included?
6. Significance:	This is a value judgment of the item, in the context of the relevant research area • Is the item meaningful? (this incorporates feasibility, utility and relevance) • Does it add context? • Does it enrich or add something unique to the research? • Does it strengthen or refute a current position? • Would the research area be lesser without it? • Is it integral, representative, typical? • Does it have impact? (in the sense of influencing the work or behavior of others)

Table S7: Summary of Included Studies by Theme.

Author(s) & Year / Data Year	Location / Housing Types	Study Group / Tenure	Study Type	Risk Factors for mould/mildew/fungi	Association	Key findings / Impacts / Prevalence
<i>Theme – COVID-19 insights & housing structural conditions</i>						
‘Trapped’, ‘anxious’ and ‘traumatised’: COVID-19 intensified the impact of housing inequality on Australians’ mental health (Bower et al., 2021)	Location: National / unknown	Adults n=2,065	MMR Cross sectional	Poor housing conditions including: Mould, cracks, dampness	Y	Health impacts from poor housing conditions: Depression. For every major structural physical issue (mould, cracks, damp) the likelihood of Depression increased by 14%. Note: associations were no longer significant when covariates were accounted for.
Data Year: 2020	Housing Types: Mixed housing types	Mixed Tenure	SRQ & IQ QUALo			Prevalence: 21% (n=380) reported between 2 and 9 major structural building problems 17.8% reported had 1 major structural building problem Key findings: Increased time at home had both protective and negative consequences.
Rental Insights A COVID-19 Collection AHUI (Baker & Daniel, 2020)	Location: National / unknown	Households N=14,486	QUAN Prevalence study	Poor housing conditions including: Mould, damp, cold, cracks		Health impacts from poor housing conditions: ‘Poor’ general health related to Approx. 37% mould ‘Poor’ general health related to Approx. 36% cold ‘Poor’ general health related to Approx. 32.5% damp
Data Year: 2020	Housing Types: Mixed	Rental (Private rental / public & community housing)	SRQ Dataset	Socioeconomic circumstance: Unaffordable housing Younger households (18–49 years old) compared households aged over 50 years Couples with children Families with children Single parent-headed families		People reporting Asthma had, 27% cold, 35% mould & 28% damp. These were higher than the broader sample. A few quotes – ‘Allergies, bronchitis and breathing difficulties from living in damp, wet, cold and mouldy housing’. Prevalence: 40% of rental dwellings reported problems with cracks in walls and floors 27% of rental dwellings reported problems with mould 21% of rental dwellings reported problems with dampness 23% of rental dwellings reported not being able to keep warm in their home during cold weather 69–78% in ‘Very Poor’ quality houses. Key findings:

						Widespread problems of cold, mould and damp, and close to 50% families with children in social housing reported multiple problem conditions (including dampness / mould)
<i>Theme – Housing structural conditions, socioeconomic circumstance & health</i>						
An extensive study on the relationship between energy use, indoor thermal comfort, and health in social housing: the case of the New South Wales, Australia (Haddad et al., 2019)	Location: Sydney metro, NSW	Households N=106 Residents n=109	QUAN Cohort Study	Poor housing conditions including: Mould		Health impacts from poor housing conditions: 28% psychological disorders (including depression) 32% allergies, 54% reported specific health problems (airway 20% / blood disease 20%) or pain Out of 42 children 26% reported allergic reactions
Data Year: 2018 / 2019	Climate Zone 5/6	Social housing (public, community & affordable housing)	IAS Survey Inspector	Socioeconomic circumstance: People living in social housing		Prevalence: 42% of dwellings had problems with mould and condensation 40% mould in the bedrooms 35% wet areas (bathroom, laundry, kitchen) 17% in living areas, 5% in all rooms
	Housing Types: Mixed					Key findings: Summer indoor temps exceeding 39.8c, participants spent an average of 18 hrs at home per day, problems with mould and condensation and health impacts from poor housing quality were common amongst people living in social housing.
Disrupted: The consumer experience of renting in Australia (Choice et al., 2018)	Location: National	Adults n=1547	Prevalence study	Poor housing conditions including: Mould	PY	Prevalence: 51% of people who rent living in a home that is need of repairs 33% renters have experienced problems with mould in bathroom 14% renters have experienced problems with mould in bedrooms 35% all people who rent reporting mould in their bathrooms and 20% reporting mould in their bedrooms
Data Year: 2018	Housing Types: Mixed	Rental	SRQ	Socioeconomic circumstance: Tenants in private rental market Families with children		
				Building characteristics: Poor ventilation Difficulty to keep property warm Difficulty to keep property cool		Key findings: Almost 2 in 5 (39%) families with children have reported issues with mould in the bathroom, compared with 29% of other people who rent. NSW has the highest reported incidence of mould. Mould that is difficult to remove or that reappears remains a constant issue for people who rent across Australia.
Exploring the Relationship between Housing and Health for Refugees and Asylum Seekers in South Australia (Ziersch, Walsh, et al., 2017)	Location: SA	Adults from refugee or asylum-seeking backgrounds (n=50 (28 refugee & 22	Qualitative Descriptive study	Poor housing conditions including: Mould, Cold and damp Lack of heating and/or cooling, Leaking pipes, Leaking ceilings, Peeling paint Overcrowding	PY PY	Health impacts from poor housing conditions: Cold, damp and mouldy housing was identified to be one of the most significant factors reported across the interviews perceived to be causing a range of physical and mental health issues, including: Respiratory problems Sadness / depression Joint pain.
Data Year: <2017	Climate Zone unclear		QUALi			
	Housing Types:					

	Unknown	asylum seekers))		Broken amenities		Key findings: Housing affordability, poor housing conditions, housing layout played key roles in the perceived health of the occupants. Poor housing conditions were perceived to be associated with housing affordability.
		Rental		Socioeconomic circumstance: Refugee status		
Belonging Begins at Home: Housing, social inclusion and health and wellbeing for people from refugee and asylum seeking backgrounds (Ziersch, Due, et al., 2017)	Location: SA	Adults from refugee or asylum seeking backgrounds n=423	Qualitative descriptive study	Poor housing conditions including: Mouldy Cold and damp Poor dwelling condition Absence of functioning heating and cooling	PY	Health impacts from poor housing conditions: 80% of people thought that housing had an impact on their health and wellbeing to some extent, with 25% reported that their housing affected health a great deal
Data Year: 2015-2017	Climate Zone unclear		SRQ QUALi VI			Key findings: Living in poor housing condition perceived to impact health and wellbeing, and no heating and cooling affected mood and exacerbated back and joint pain.
Unsettled: Life in Australia's private rental market (Choice & National Shelter, 2016)	Location: National	Adults n=1005	Prevalence study	Poor housing conditions including: Mould		Prevalence: 21% experienced Leaks or flooding 20% experienced mould that is difficult to remove or reappears 18% difficulty to keep property warm or cold
Data Year: 2016	Housing Types: Mixed	Private rental	SRQ	Socioeconomic circumstance: Tenants in private rental market		Key findings: 8% of people were living in properties that require urgent repairs, with women only households, people on month-to month tenancy agreements and renters on low income.
Housing conditions associated with recurrent gastrointestinal infection in urban Aboriginal children in NSW, Australia findings from SEARCH. (Andersen, Skinner, et al., 2018)	Location: NSW, Sydney (Urban)	Children n=1398 from indigenous backgrounds	QUAN Cohort Study	Poor housing conditions including: Major structural problems Damp or mildew Overcrowding Could <u>not be kept warm enough</u> Vermin	Y*	Health impacts from poor housing conditions: Recurrent gastrointestinal infection ever was associated with damp or mildew, major structural problems and carer reporting of feeling crowded.
Data Year: 2007 to 2011	Climate Zone 5/6				Y*	Living in a home with major structural problems, vermin problems or that could not be kept warm enough in winter was associated with recurrent gastrointestinal infection treated in the past month
	Housing Types: Unknown			Socioeconomic circumstance: Urban indigenous children in NSW	Y*	Children in homes with three or more housing problems were more than twice as likely to have ever had recurrent gastrointestinal infection as those in homes with 0-2 housing problems.
						Key findings: The number of housing condition problems were associated with increasing risk of recurrent gastrointestinal infection in children.
Decent not dodgy (Victorian Council of Social Service (VCOSS), 2010)	Location: VIC, Melbourne	N=116 Private rental	Prevalence study	Poor housing conditions including: Visible and extensive mould Uninhabitable		Prevalence: 19% reported visible and extensive mould (majority in the bathroom) 12% uninhabitable

Data Year: <2010	Climate Zone 6	VI BC	No heating Lack of ventilation	10% no heating	Key findings: Lack of ventilation - Of the 12 % of properties surveyed, where one or more rooms did not have a window that was able to be opened for ventilation, 53 % had one room with no ventilation, 29 % had two rooms where windows could not be opened and 2 properties surveyed had five rooms where windows could not be opened.
There's a housing crisis going on in Sydney for Aboriginal people _ focus group accounts of housing and perceived associations with health (Andersen et al., 2016)	Location: NSW, Western Sydney (Urban)	Children & families staff n=38	Qualitative descriptive study	Poor housing conditions including: Mould Damp Broken amenities Leaking rooves Structural problems Faulty plumbing Poor temperature control	Health impacts from poor housing conditions: Perceived associated with the exacerbation of asthma and respiratory conditions from mould and damp.
Data Year: 2010	Climate Zone 6		QUALi SRQ		Key findings: High prevalence of housing problems amongst urban housing for indigenous populations
	Housing Types: Mixed			Socioeconomic circumstance: Urban housing for indigenous populations	
Housing conditions of urban households with Aboriginal children in NSW Australia: tenure type matters (Andersen, Williamson, et al., 2018)	Location: NSW, Western Sydney (urban)	Caregivers (600), indigenous children (1406)	QUAN Cohort Study VI	Poor housing conditions including: Rising damp Damp/mildew on walls, ceilings, windows Major cracks in walls/floors Wood rot / termite damage	Socioeconomic risk: Y* Social housing Y** Social housing Y* Social housing Y* Social housing
Data Year: 2008 to 2010	Climate Zone 6	n=600		Socioeconomic circumstance: Social housing	Prevalence: 34% of homes reported damp and mildew of those; 19% reported rising damp 33% reported damp/mildew on walls, ceilings and windows
	Housing Types: Mixed	Mixed tenure types: Own/mortgage, private rent, social housing			Key findings: Social housing accounted for 43% of the damp and mildew affected homes, whilst renters 28% and owner/mortgage 13%
Theme – Occupant behaviors & health					
Household hygiene practices in relation to dampness at home and current wheezing and rhino-conjunctivitis among school age children (Zhang et al., 2005)	Location: WA, Perth Metro	Children N=997	QUAN Cross sectional	Risk - occupant behaviours: Highly cleaned homes	Key findings with regards health impacts: Y* Higher prevalence of current wheezing & rhino-conjunctivitis
	Climate zone 5		SRQ	Less ventilated & homes cleaned less Homes with less ventilation	Y* Visible moulds Y* Damp patches & condensation
Data Year: 2002	Housing			Protective - occupant behaviours: Highly natural vented homes Highly cleaned homes	Y* Y* Decreased damp patches, condensation and mould

	Types: Unknown					Decreased presence of mould in home
						Prevalence: 28% (n=970) reported having <i>condensation</i> 23.1% of (n=977) reported having <i>damp clothes anywhere inside the house</i> . 8.5% (n=972) reported having <i>damp patches</i> 19.2% (n=866) reported having <i>visible mould</i>
Theme – Indoor mould, building characteristics, housing biological data & health						
The incidence and short-term outcomes of acute respiratory illness with cough in children from a socioeconomically disadvantaged urban community in Australia: A community-based prospective cohort study. (Hall et al., 2017)	Location: QLD, Brisbane (urban) Climate zone 2 Housing Types: Unknown	Children < 5yrs, n=200 90% from indigenous backgrounds	QUAN Cohort Study SRQ	Risk factors: Mould in home	Y	Key findings with regards health impacts: Mould in the house was a predictor of acute respiratory illness with cough (ARIwC) in children. The presence of eczema, parent/carer employment status and having an Aboriginal and Torres Strait Islander mother/non-Aboriginal and Torres Strait Islander father was also a predictor of (ARIwC) in children.
Data Year: 2013 to 2015						
Domestic airborne pollutants and asthma and respiratory symptoms in middle age (Mészáros et al., 2014)	Location: TAS Climate zone 7 Housing Types: Unknown	Adults n=5729	QUAN Cohort Study SRQ VI	Risk factors: Recent mould Recent mould (stratified by atopy & gender) More rooms affected by mould	Y** Y** Y*	Key findings with regards health impacts: Increased risk of current asthma, wheeze, nocturnal chest tightness Increased risk of current non-atopic asthma only in males Increase trend for current asthma, wheeze and nocturnal chest tightness Protective: Reverse cycle air-conditioning was negatively associated with doctor diagnose asthma Prevalence: 48.8% reported that mould was <i>ever</i> in the house (<i>on any home surface</i>) 34.7% reported mould in the home in the last 12 months
Data Year: 2004						
Changes in indoor allergen and fungal levels predict changes in asthma activity among young adults (Matheson et al., 2005)	Location: VIC Melb. Climate zone 6 Housing Types: Unknown	Young adults N=485 N=359	QUAN Cohort Study IQ, AS / DS	Biological risk: Doubled levels of total fungi Doubled levels of Cladosporium Increase in fungal exposure Increase in fungal exposure Increase in fungal exposure Increase in fungal exposure	Y* Y* Y* Y* Y Y	Key findings with regards health impacts: 53% greater odds of developing atopy 52% greater odds of having had an attack of asthma in the last 12 months Onset and persistence of Asthma Onset and increase in atopy Increase in wheeze Increase in allergy to fungi
Data Year: Data from 1996 and then in 1998						
Mouldy houses influence symptoms of asthma among atopic individuals (Dharmage et al., 2002)	Location: VIC Latrobe Valley – Rural	Young adults N=35	QUAN Cohort Study	Risk factors: Current visible mould	Y*	Key findings with regards health impacts: Increase in Peak Flow Variability (PFV) in a group of asthmatics sensitized to fungi. Prevalence:

Data Year: 1997/ 98	Climate zone 6		SRQ, IQ AS / DS			25.7% had current visible mould in winter 14.3% had current visible mould in spring 17.1% had current visible mould in summer 8.6% had current visible mould in autumn 42.9% of participants admitted to observing mould in their bedrooms at the beginning of the study
	Housing Types: Freestanding houses					
Current indoor allergen levels of fungi and cats, but not house dust mites, influence allergy and asthma in adults with high dust mite exposure (Dharmage et al., 2001)	Location: VIC Melbourne	Young adults homes N=485	QUAN Cohort Study	Biological risk: High levels of total airborne fungi Current indoor levels of fungi	Y* Y	Key findings with regards health impacts: Increased bronchial hyperreactivity (BHR) Protective: Lower risk of allergy to fungi Prevalence of homes: 55% of the houses (n=485) had viable airborne fungal propagules concentrations exceeding 500 CFU/m
Data Year: 1996	Climate zone 6		IQ, DS			
	Housing Types: Freestanding houses					
The Relation between Infant Indoor Environment and Subsequent Asthma (Ponsonby et al., 2000)	Location: TAS	Infants n=863	QUAN Cohort Study	Combination of risk factors: Mould (observed or reported) and high indoor relative humidity and 6 or more residents in the home.	Y*	Biological impact: High house-dust-mite allergen (Der p 1) Prevalence: 15.8% of n=855 homes, the mothers reported mould found inside the house (excluding bathroom) 4.7% of n=855 homes, the inspector observed mould in the infant's bedroom Findings: Poor indoor air quality in an infant's home may play a role in the development of childhood asthma.
Data Year: From 1995	Climate zone 7		IQ, HT, VI, RH			
	Housing Types: Unknown					
Hypersensitivity pneumonitis in a mouldy house (Saltos et al., 1982)	Location: Unknown	Adult / child n=2 N=1	Case Report	Risk factors: Old house, damp, dust and mould behind wallpapers and under carpets.	Y	Key findings with regards health impacts: Hypersensitivity pneumonitis Biological findings: Exposure to thermophilic microorganisms prevalent in their domestic environment. Fungi of the Aspergil/us, Penicil/ium and Cladosporium species were isolated from samples obtained from the walls and floor, but thermophilic actinomycetes were not isolated. Unable to prove causative factors. Key Findings: Both patients recovered after moving from this place of residence and medical treatment.
Data Year: 1979	Housing Types: Unknown					
ANRES: A snapshot of living with Environmental Sensitivities in Australia in 2019	Location: Unknown	Adults & children n=310	Prevalence study	Risk factors: Mould and water damaged buildings	PY	Key findings with regards health impacts: Mould sensitivity reported as a common trigger for Multiple Chemical Sensitivity (MCS)

(Martin, 2019) Data Year: 2019	Housing Types: Unknown		SRQ			8.7% of 310 participants (n=27) reported a <i>biotoxin illness</i> . Of those reporting a <i>biotoxin illness</i> - 25 out of the 27 reported having MCS 5 out of the 27 reported Lyme had a <i>biotoxin illness</i> . Out of the 27 reported CFS/ME, 18 had <i>biotoxin illness</i> . <i>Biotoxin illness</i> was reported to intersect with Lyme, CFS/ME & MCS
Report on the Inquiry into Biototoxin-related Illnesses in Australia (Commonwealth of Australia. House of Representatives Standing Committee on Health Aged Care and Sport, 2018) Data Year: 2018	Location: NSW, VIC, QLD, WA + unknown Housing Types: Mixed	Individual submissions n=114 Business submissions n=28 Total n=142	Qualitative descriptive study QUALo Government inquiry	Risk factors: Presence of mould in homes and/or workplaces Building characteristic risk factors: Interstitial condensation, air condition systems, air-conditioned at all times, rental homes, gutters installation, inadequate ventilation, inadequate and/or incorrectly installed, waterproofing, lack of timely or appropriate repair or remediation, use of timber framing and/or gypsum board, exposing building materials to moisture during construction; uncovering of 'hidden mould' in wall cavities during renovation works.	PY	Key findings with regards health impacts: Anecdotal reports describing the following symptoms that have been attributed to exposure to mould; chronic fatigue, pain, memory and concentration problems, disorientation, insomnia, gastrointestinal issues, sinus issues, fever, headaches and respiratory issues Terminology used for illness perceived as associated with indoor mould/damp housing included; CIRS , CIRS-Water Damaged Building, biotoxin-related illness and mould illness.
Epidemiological characteristics of chronic fatigue syndrome/myalgic encephalomyelitis in Australian patients (S. C. Johnston et al., 2016) Data Year: 2013 to 2015	Location: National Housing Types: Unknown	Adults with CFS/ME n=535	QUAN Cohort Study SRQ VI	Risk factors: Molds	PY	Key findings with regards health impacts: Illness onset trigger for 6.2% (n=10) of patients with CFS/ME (Fukuda criteria) and 9.4% (n=16) of patients with CFS/ME (ICC criteria)

<p>Spatial characteristics of southeast Australian housing linked with allergic complaint (Robertson, 2001)</p> <p>Data Year: 1983 to 94</p>	<p>Location: Melbourne VIC, TAS, NSW</p> <p>Housing Types: Mixed</p>	<p>Homes N=38</p>	<p>QUAN Prevalence study</p> <p>VI</p>	<p>Risk factors: Dampness faults</p> <p>Dampness - which was defined as moisture/condensation related repairs to the home or (exhaust fans, drainage, plumbing leaks etc) OR the replacement of damp-affected materials..</p> <p>Building characteristic risk factors: Risk of dampness faults may have multiple factors to do with building orientation, microclimate (with regards to wind), adjacencies of rooms / bathroom windows and higher number of bedrooms or bathrooms.</p>	<p>PY</p> <p>Key findings with regards health impacts: Symptoms included: fatigue, hay fever, headache, mood change, joint pain, sensitivity to foods, water and textiles, disturbed sense of smell, diagnosed asthma, eczema, pollen and dust mite allergy.</p> <p>Prevalence: 55% of the 29 homes in Melbourne had damp faults in the Melbourne-based complaint housing, however, the reporting of visible mould in bathrooms were excluded if cleaned by occupants</p> <p>Recommendations: Consideration must be given to the orientation of room types in relation to common wind directions to help avoid moisture related issues.</p>
<p>Indoor airborne fungal spores, house dampness and associations with environmental factors and respiratory health in children (Garrett, Rayment, et al., 1998)</p> <p>Data Year: 1994/ 95</p>	<p>Location: VIC Latrobe Valley – Rural</p> <p>Climate zone 6</p> <p>Housing Types: Freestanding houses</p>	<p>Children (n=148) Homes N=80</p>	<p>QUAN Cohort Study</p> <p>SRQ, IQ, IAS, VI, RH,</p>	<p>Biological risks: Indoor exposure to certain fungal genera in winter.</p> <p>Building characteristic risk factors: Condensation & visible mould growth Bedrooms with cool temp, musty odour, water intrusion, foundation as stumps, cracks in cladding, limited ventilation through open windows, infrequent use of opening windows, few extractor fans in the wet areas, and opening windows only 2-6 or 6-10 months / year</p> <p>Occupant behaviour: Failure to remove mould growth High indoor humidity RH > 60% Limited (one location) of insulation</p>	<p>Y*</p> <p>Y*</p> <p>Y*</p> <p>Y*</p> <p>Y*</p> <p>Key findings with regards health impacts: Allergy, asthma, atopy and respiratory symptoms. Fungal allergies were more common in winter for children exposed to Cladosporium or Penicillium spores or to a musty odour.</p> <p>Biological risk factors findings: Large concentrations of Cladosporium spores Larger total airborne fungal spore concentrations</p> <p>Larger total airborne fungal spore concentrations Large concentrations of Penicillium Larger viable spore concentrations</p> <p>Prevalence within homes: 100% had visible mould growth at some time in the study 92% of homes had condensation 40% of homes had water intrusion 67% of homes had musty odour</p> <p>Key findings: Occupants were not aware that their home had dampness problems with 60% of households removed mould growth on a regular basis but only</p>

						23% of occupants considered their home to be damp (including structural dampness and condensation).
						In this study, no significant associations were seen between spore concentration levels and that of air-conditioning, gas stove presence, damp house, blocked sub ventilation, cladding type, soil type, drainage, garden beds around the house or house age.
Built form and health (Robertson, 1992)	Location: VIC Melbourne	Occupants with environmental sensitivities	QUAN Prevalence study	Risk factors: Regular exposure to a pollutants carried on airflow from bathrooms in homes with problems with dampness.	PY	Key findings with regards health impacts: Symptoms included from the housing occupants and/or visiting architect; hypersensitivity or allergy, bronchial complaints (sinus, cough, hay fever, including asthma), loss of sense of smell, skin complaints (eczema, itching, inflammation), fatigue and other (including headaches, hyperactivity, mood change).
Data Year: < 1992	Climate zone 6	Homes N=40		Building characteristic risk factors: A combination of factors including; bathroom window orientation, site slope, number of window openings, reduced external/interval wind speeds.		Key findings: Remedial measures may depend more upon wind characteristics than sun. Air flow may carry from damp room to bedrooms.
	Housing Types: Freestanding houses					
Allergic alveolitis due to wood-rot fungi (Bryant & Rogers, 1991)	Location: NSW Sydney	Adults N=12	QUAN Case Control	Risk factors: Indoor exposure to fungi from damp walls and dry-rot wood	Y*	Key findings with regards health impacts: Domestic allergic alveolitis
Data Year: < 1991	Climate zone 5		HT, DS	Building characteristic risk factors: Age of home >70 years (in <1991), poor housing condition, floor boards with extensive dry-wood damage, collapsing floor boards and mould growth in damp walls	Y*	Biological findings: Elevated indoor fungi from damp walls and dry-rot wood
	Housing Types: Freestanding houses					
<i>Theme – Building characteristics, indoor mould/mildew/fungi, housing biological data & allergens</i>						
Predictors of high house dust mite allergen concentrations in residential homes in Sydney (Mihirshahi et al., 2002)	Location: NSW Sydney	Pregnant women N = 616	QUAN Cross-sectional	Building characteristic risk factors: Age of home, wood foundation, weatherboard, beds with mattresses > 2 years old, woollen or synthetic blankets / quilts and carpeted floors as oppose to hard floors	Y**	Biological findings: High house-dust-mite allergen (Der p 1) concentrations
Data Year: (unsure, 1997 to 2001)	Climate zone 5/6		IQ DS			Prevalence: 23.6% said yes to mould present in home (excluding mould in the bathroom)
	Housing Types: Mixed					Key findings with regards to mould: Negative association - Visible mould growth did not have an independent effect on house-dust-mite allergen levels.

Residential characteristics influence Der p 1 levels in homes in Melbourne, Australia (Dharmage, Bailey, Raven, Cheng, et al., 1999)	Location: VIC Melbourne Climate zone 6 Housing Types: Freestanding houses	Young adults N=485	QUAN Cross-sectional IQ, DS, RH	Building characteristic risk factors: Observed dampness and visual mould Houses built before 1980, with wooden floors built on stumps, with high relative humidity, with visible mould in the room, in beds with an old mattress or in beds without a quilt.	Biological findings: Y* Predictors of Der p 1 levels in the bedrooms Y* Predictors of Der p 1 levels in the bedrooms Prevalence: 36% homes had observed mould 26% homes had observed damp patches
Prevalence and residential determinants of fungi within homes in Melbourne, Australia. (Dharmage, Bailey, Raven, Mitakakis, et al., 1999)	Location: VIC Melbourne Climate zone 6 Housing Types: Freestanding houses	Young adults N=485	QUAN Cross-sectional IQ, DS, IAS, VI	Building characteristic risk factors: Season: Summer / Autumn Visible mould on 2 or more surfaces Damp patches / visible mould + no mechanical ventilation (ceiling fan in bedroom or kitchen exhaust fan) Double brick walls, no solid fuel fire in last 12 months, no ceiling fan in bedroom, no kitchen exhaust fan, old carpets equal > 5 years old, infrequent natural ventilation, windows open, vacuuming > 1 week ago and presence of a cat or presence of a dog	Biological findings: Y* High indoor fungal exposure (fungal propagules cfu/ m ³) Y* High indoor fungal exposure (fungal propagules cfu/ m ³) Y* High indoor fungal exposure (fungal propagules cfu/ m ³) Prevalence: 55% had viable fungal propagules concentrations > 500 cfu/ m ³ 36.5% had 1 or more surfaces with visible mould in the bedroom 25.6% had observed damp patches in either or both bedroom and adjoining room 90% had one or more mouldy surfaces had damp patches in both bedroom and the adjoining room. 27% of homes without damp patches in either the bedroom or adjoining room had one or more mouldy surfaces
Determinants of dust mite allergen concentrations in infant bedrooms in Tasmania (Couper et al., 1998)	Location: TAS Climate zone 7 Housing Types: Freestanding houses	Infants n=80 N=72	QUAN Cross-sectional SRQ, IQ DS	Building characteristic risk factors: Mould in the home (not in bathroom), low maximum temps in the infants bedroom, high indoor humidity and 6 or more residents Frequent vacuuming (at least 1/ week) and carpeted bedrooms	Biological findings: Y* High house-dust-mite allergens (Der p1) Y High house-dust-mite allergens (Der p1) Prevalence: 34.3% had mould in bathroom in past month 20.8% yes to 'Have you noticed mould inside your house (excluding bathroom)?'

Indoor environmental factors associated with house-dust-mite allergen (Der p i) levels in south-eastern Australian houses (M. H. Garrett, Hooper, & Hooper, 1998)	Location: VIC	Children (n=148)	QUAN Cross-sectional	Building characteristic risk factors: New houses (data from 1994/95) with brick cladding and slab-type foundations, wool carpets in bedrooms, presence of substantial visible mould growth, musty odour, wool bedding and inner spring mattresses and high indoor humidity RH > 50%	18.8% had mould other than in bathroom in the past month 9.8% had mould in bedroom observed by the inspector
	Housing Types: Freestanding houses	Homes N=80	SRQ, IQ, DS, IAS,	Y*	Biological findings: High levels of house-dust-mite allergen Prevalence: 29.3% bedrooms had observed substantial mould 70.7% bedrooms had observed none/slight mould 21.3% living rooms had observed substantial mould 78.8% living rooms had observed none/slight mould
Airborne Mould Levels and Related Environmental Factors in Australian Houses (Godish et al., 1996)	Location: VIC Latrobe Valley	Homes N=40	QUAN Cross-sectional	Building characteristic risk factors: Age of home >20 years (in 1992) High indoor humidity RH equal > 70% Water intrusion	Y* Y* Y*
	Housing Types: Freestanding houses	Climate zone 6	IQ, IAS, RH VI		Biological findings: Elevated indoor cultured mould levels Elevated indoor cultured mould levels Elevated indoor total mould spores Biological prevalence: 58% of homes had one or more rooms exceeding 1,000 cfu/ m ³ 48% of homes had one or more rooms exceeding 10,000 cfu/ m ³ 100% of homes had detected Penicillium genus at significant higher concentration, in cultural mould samples, compared to the outdoor concentrations
<i>Theme – Building characteristics & housing condition surveys (that report indoor mould/mildew/fungi)</i>					
The Australian Housing Conditions Dataset: Technical Report (Baker et al., 2018)	Location: NSW, VIC, SA	Adults N=4501	QUAN Cross-sectional	Tenure/housing type breakdown: 87.9% owner occupier 10.2% rented 83.7% separate house 9.2% semi-detached/terrace/townhouse 6.8% flat/apartment	Prevalence poor housing conditions included: 8.8% of dwellings had problems with mould 13.9% of dwellings had problems with rising damp 51.9% of dwellings had problems with cracks in walls/floors 16.9% of dwellings had problems of sinking/moving foundations 13.7% of dwellings had problems with roof defects
	Housing Types: Mixed	Mixed tenure types	SRQ, IQ		Prevalence housing quality: 1.1% had self-assessed “Poor” quality of dwelling 0.3% had self-assessed “Very poor” quality of dwelling
1994 - Australian Housing Survey - Housing Characteristics Costs Conditions. ABS 41820 (Australian Bureau of Statistics, 1996)	Location: National	Homes N=14,456	QUAN Cross-sectional	Building characteristic risk factors: Age of dwelling Homes 10 years or less in 1994 Homes 10 years or more in 1994 Problems arising from roofs (tiles or metal sheeting) Problems arising from outer walls (double brick, brick veneer, timber)	Prevalence poor housing conditions included: 9.54% homes had mould or mildew 20.22% homes had mould or mildew 17.97% of total homes had mould or mildew Mould / mildew / water penetration - 8% of dwellings reported leaking roof or ceiling Water penetration
	Housing Types: Mixed	Mixed tenure types	SRQ, IQ	Y Y Y Y	

				Problems arising from leaking window frames (aluminium or timber)	Y	Water penetration
<i>Theme – Building characteristics, conditions, defects & ‘root cause’ studies</i>						
Mould risk evaluations in residential buildings via site audits and longitudinal monitoring (Kempton et al., 2021)	Location: Sydney Climate zone 5/6	N=233 N=30 subset N=5 subset	QUAN Case Series Houses	Building characteristic risk factors: Bedroom RH >80% High wall surface temperatures compared to the room air dewpoint temperature.	Y Y	Risk for: Mould growth Mould growth
Data Year: (2016 to 2017 remediations) 2017, 2018 to 2019	Housing Types: Mixed			Root cause of mould from N=233 property insurance reports: 70.8% Ventilation 39.1% Leak identified 19.3% Only a leak 15% Lack of natural light 7.3% Rising damp 1.7% External drainage issues		Prevalence mould growth from insurance claims: Average number of rooms affected in claims were 2 78% Bathrooms were affected by 35% at least 1 bedroom affected 32% kitchens 24% lounge room Key findings: 86.7% of remediation works reported painting - which included painting over surfaces that was affected by discolouration by mould. 40% of the subset remediated homes (N=30) experienced mould regrowth within 12 months. Remediation without addressing the “root cause” of mould issues is not effective in preventing mould growth from reoccurring in the short term. A number of mould growth modelling tools were unable to reliably predict the risk of mould occurrence in the N=5 monitored properties.
An examination of building defects in residential multi-owned properties (N. Johnston & Reid, 2019)	Location: NSW, Qld, VIC	N=212 Building defect audit reports	MMR Defect audit reports	Building characteristic risk factors: Lack of adequate ventilation causing condensation and mould		Key findings by expert opinions: Most common defects noted in the reports were, water damage and mould to plasterboard
Data Year: 2003 to 2018	Housing Types: Medium / high density housing / apartments / units		QUALi	Prevalence of water/ingress/moisture related defects identified: 29% from all construction systems defects 71% from waterproofing defects 56% from roofing and rainwater disposal 33% from defects in building fabric / cladding 9% from structural defects		Mould that has arisen due to water ingress defects is often present and has the potential to lead to serious health implications for residents. The lack of care by trades in properly managing mould often leads to spores embedding or remaining in lots. Ineffective mould remediation by trades leading to spread of spores to other areas, spores embedding or remaining in lots. Industry concerns about physical health impacts. Concerns about occupants living in apartments affected by mould.

Cracks in the Compact City: Tackling defects in multi-unit strata housing Final Project Report (Crommelin et al., 2021) Data Year: 2008 to 2017	Location: Sydney	N=635	MMR	Water related defects: Water leak / penetration / ingress - Wall, Slab	Y	Prevalence of type of water related defects identified: 18% of defects identified
				Moisture / Mould / Humidity / Dampness	Y	6% of defects identified
	Climate zone 5/6		Secondary data, reports,	Water pond / Water flooding	Y	6% of defects identified
				Waterproofing defect	Y	5% of defects identified
			QUALi	Drainage defects	Y	5% of defects identified
	Housing Types:			Pipes	Y	4% of defects identified
	Apartments / units			Blocked weephole	Y	2% of defects identified
				Shower booth, Basin etc.	Y	1% of defects identified
				Tap	Y	1% of defects identified
Scoping Study of Condensation in Residential Buildings (Dewsbury, Law, Potgieter, et al., 2016) Data Year: 2015 to 2016	Location: National	Expert opinions n= 2662	MMR	Building characteristic risk factors: Newer building typologies may not be able to manage vapour pressure, condensation and mould. Many interrelated factors including design, construction and building occupation.	PY	Key findings by expert opinions: Potential for surface/interstitial condensation leading to visible mould growth and degradation of building materials for new code compliant homes
	Housing Types: Mixed		QUALi			Prevalence: There is a national concern about condensation in buildings constructed since 2004 may include 40% of all Class 1 and Class 2 buildings.
				The top three potential causes of excess condensation: 1) the occupant being unaware of their behaviours contributing to condensation; 2) an increase in air-tighter buildings and sealing of windows and doors; and 3) the occupant reluctant to open windows and doors due to energy costs.		
The Unintended Consequence of Building Sustainably in Australia (Law & Dewsbury, 2018) Data Year: 2014	Location: TAS	Homes N=2	QUAN Case Series Houses	Building characteristic risk factors: Code compliant homes in a cool climate.	Y	Key findings by expert opinions: Surface/interstitial condensation leading to visible mould growth
	Climate zone 7			Thermal bridging - metal window frames, around an uninsulated recessed ceiling light fitting, condensation underside roof. External walls adjoining unheated spaces. Poorly installed insulation. Vapour impermeable vinyl floor finish. Unventilated external wall cavities. Non breathable wall wraps/foil wraps.		
	Housing Types: Freestanding houses		RH IAS DS			
Investigation of Destructive Condensation in Australian Cool temperate Buildings Appendix 3: Case Study House 1, 2 & 3 (Dewsbury, Law, & Henderson, 2016c, 2016d, 2016a, 2016b)	Location: TAS	Homes N=3	QUAN Case Series Houses	Building characteristic risk factors: Code compliant homes in a cool climate.	Y	Key findings by expert opinions: Surface/interstitial condensation leading to visible mould growth
	Semi-rural			Thermal bridging - condensation on/around metal window frames, insulation in direct contact with roof sarking system, around an uninsulated recessed ceiling light fitting,		
	Climate zone 7		RH IAS			Root cause of mould from: Exposed building envelope Condensation underside attic/roof

Data Year: 2014/15	Housing Types: Freestanding houses	DS	condensation underside roof, external walls adjoining unheated spaces.	Ground moisture in subfloor area Poor ground drainage leading Inappropriate site drainage. Inappropriate installation of roof vents Incorrect installation of foil and insulation sarking system Unprotected wall penetrations Unprotected external timber structure Poorly installed insulation Vapour impermeable floor finish Unventilated external wall cavities Non breathable wall wraps/foil wraps Poor quality workmanship / construction	
Theme – Energy retrofit, mould/mildew/fungi intervention studies					
Addressing health and equity in residential low carbon transitions– Insights from a pragmatic retrofit evaluation in Australia (Willand et al., 2019)	Location: VIC Climate zone 6	Low-income older households N=30	MMR Before/after studies QUALi VI, IAS	Building characteristic risk factors: Poorly ventilated areas behind curtains Cold surfaces of single glazed windows Protective occupant behaviours: Occupant behaviours that help avoid mould.	Biological findings: Prevalence of mould Key findings: Approx. 50% of occupants, kept windows or doors permanently open in the house to accommodate dogs, avoid mould, improve breathing, mitigate feelings of claustrophobia or due to having grown up sleeping on enclosed verandas or “sleep-outs”
Data Year: 2014/15	Housing Types: Mixed				
Indoor Air Quality problems as a result of installing split system HVAC units in mass housing accommodations (Midson et al., 2012)	Location: WA North-west Remote Climate zone unknown	N=12 rooms/areas	QUAN Intervention study	Building characteristic risk factors: Split system air-conditioning units	Biological impact: Source of mould growth in mould affected properties.
Data Year: <2012	Housing Types: Mass accom. blocks				
Dishwashers - A man-made ecological niche accommodating human opportunistic fungal pathogens (Zalar et al., 2011)	Location: International study including VIC Climate zone 6	N=189 dishwashers (N=7 Australian households)	QUAN Prevalence study	Building characteristic risk factors: Plastic seals in the dishwasher door.	Biological findings: 62% of dishwashers were positive for fungi, and 56% of these accommodated pathogenic fungi responsible for causing systemic disease in humans and frequently colonize lungs of patients with cystic fibrosis.
Data Year: <2010					

Hot water extraction in carpeted homes in Western Australia: Effect on airborne fungal spora (C. Cheong et al., 2007) Data Year: < 2007	Location: WA Perth	N=14 Single family dwellings	QUAN Case Control	Intervention: Professional cleaning domestic carpet with 'wet extraction' method.	Y	Biological impact: Increased quantities and variety of fungal and airborne particulate loads available for resuspension.
	Climate Zone 5 Housing Types: Freestanding houses		IAS, VI, DS	Building characteristic risk factors: Carpets without professional cleaning interventions, in this study 'wet extraction', or have poor cleaning maintenance.	Y	Higher levels of fungi
Intervention study of airborne fungal spora in homes with portable HEPA filtration units (C. D. Cheong et al., 2004) Data Year: 2000	Location: WA Perth	N=10 Single family dwellings	QUAN Case Control	Intervention: Homes fitted with portable HEPA filtration units.	Y	Biological impact: Overall average reduction of 35% in airborne viable indoor fungal levels and a 38% reduction in airborne fine particles.
	Climate Zone 5 Housing Types: Freestanding houses		IAS, VI, DS			

Notes: PY = Perceived association, Y = Positive association, Y* = Significant association (P<0.05), Y** = Significant association (P<0.001), SRQ = Self-reported questionnaire, IQ = Interviewer questionnaire, QUALi = Qualitative interviews QUALo + Open ended questions, VS = Visual storytelling, VI=Visual inspection, IAS = Indoor air sampling, DS = Dust sampling, HT = Human tests, RH=Relative humidity, n=people, N=homes, Mixed = Unit / townhouse / freestanding house. Grey background indicates that the study was not published in an academic journal/publication.

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